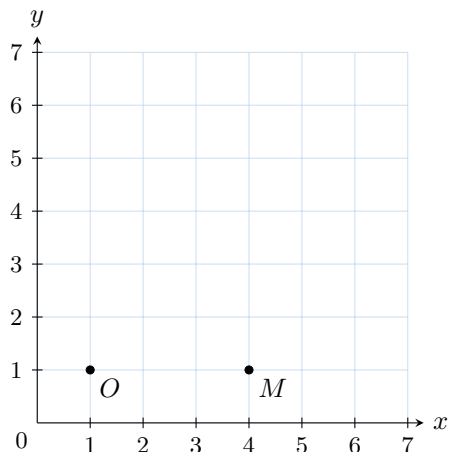


# HOMOTHETY

## A DEFINITIONS

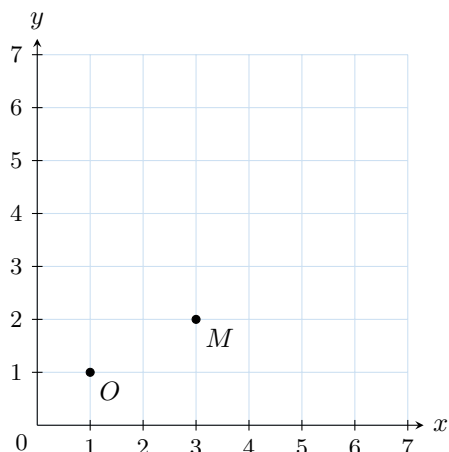
### A.1 FINDING THE IMAGE OF A POINT

**Ex 1:** Find the coordinates of the image of point  $M$  under a homothety with center  $O$  and scale factor  $k = 2$ .



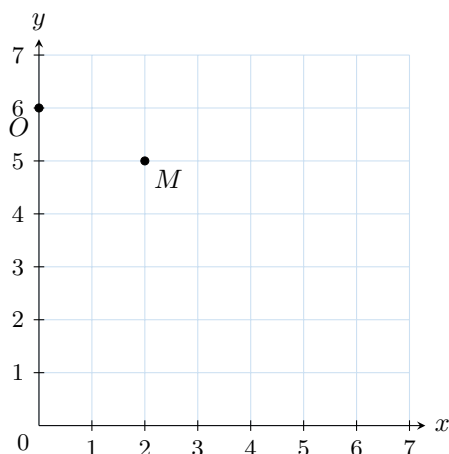
$M'(\text{ }, \text{ })$

**Ex 2:** Find the coordinates of the image of point  $M$  under a homothety with center  $O$  and scale factor  $k = 2$ .



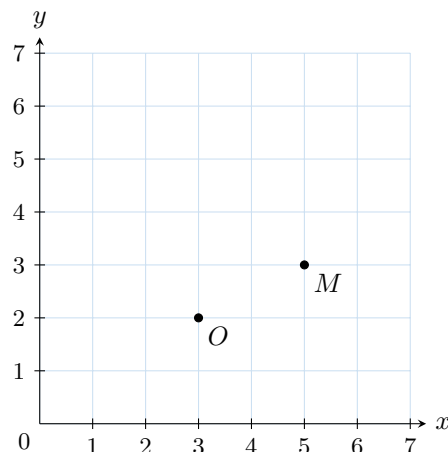
$M'(\text{ }, \text{ })$

**Ex 3:** Find the coordinates of the image of point  $M$  under a homothety with center  $O$  and scale factor  $k = 3$ .



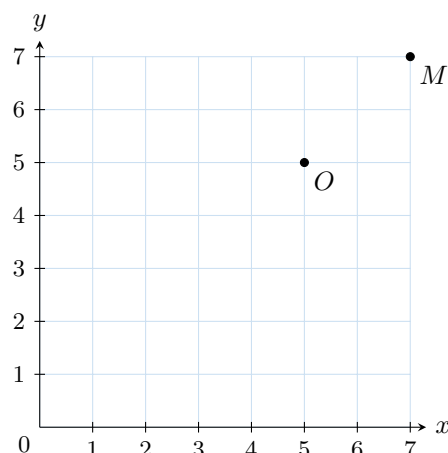
$M'(\text{ }, \text{ })$

**Ex 4:** Find the coordinates of the image of point  $M$  under a homothety with center  $O$  and scale factor  $k = -1$ .



$M'(\text{ }, \text{ })$

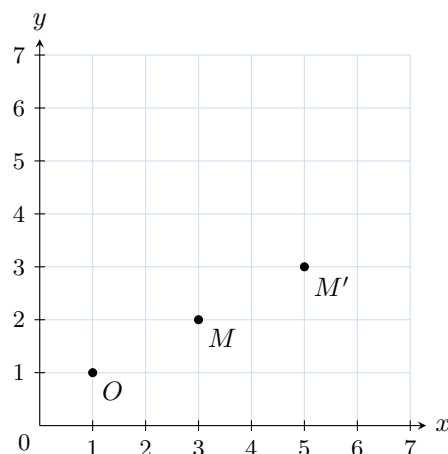
**Ex 5:** Find the coordinates of the image of point  $M$  under a homothety with center  $O$  and scale factor  $k = -2$ .



$M'(\text{ }, \text{ })$

### A.2 FINDING THE SCALE FACTOR

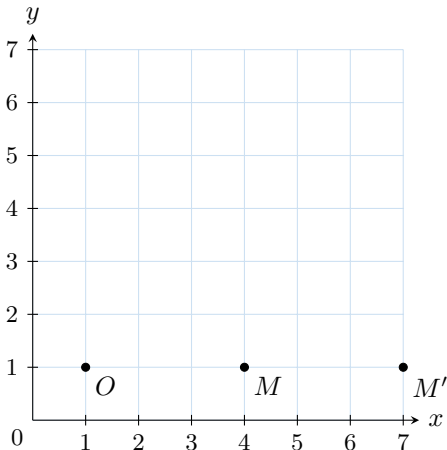
**Ex 6:** The point  $M'$  is the image of the point  $M$  by homothety of center  $O$  and scale factor  $k$ .



Find the scale factor.

$k =$

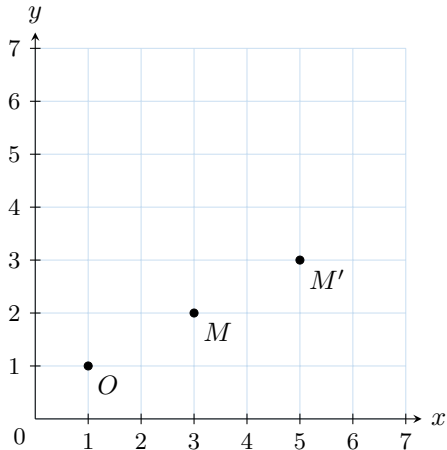
**Ex 7:** The point  $M'$  is the image of point  $M$  under a homothety with center  $O$  and scale factor  $k$ .



Find the scale factor.

$k =$

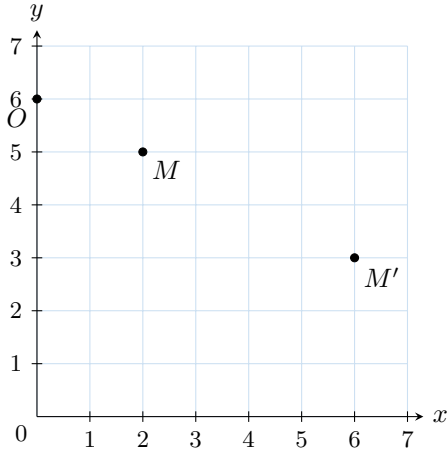
**Ex 8:** The point  $M'$  is the image of point  $M$  under a homothety with center  $O$  and scale factor  $k$ .



Find the scale factor.

$k =$

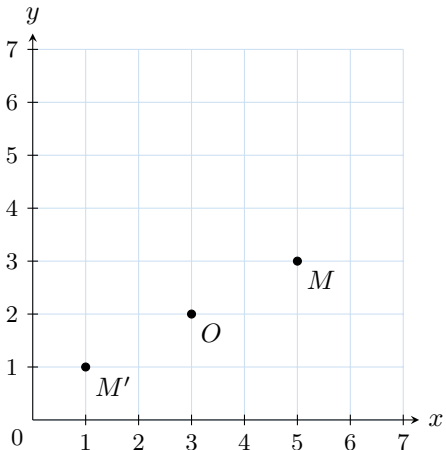
**Ex 9:** The point  $M'$  is the image of point  $M$  under a homothety with center  $O$  and scale factor  $k$ .



Find the scale factor.

$k =$

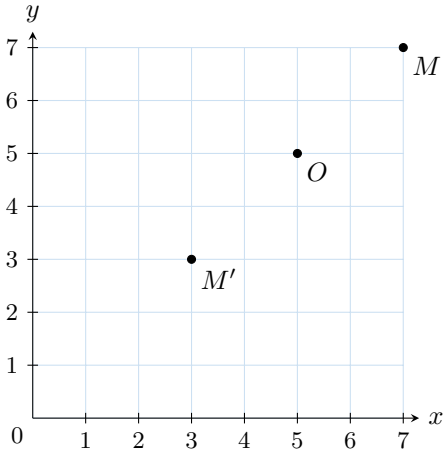
**Ex 10:** The point  $M'$  is the image of point  $M$  under a homothety with center  $O$  and scale factor  $k$ .



Find the scale factor.

$k =$

**Ex 11:** The point  $M'$  is the image of point  $M$  under a homothety with center  $O$  and scale factor  $k$ .

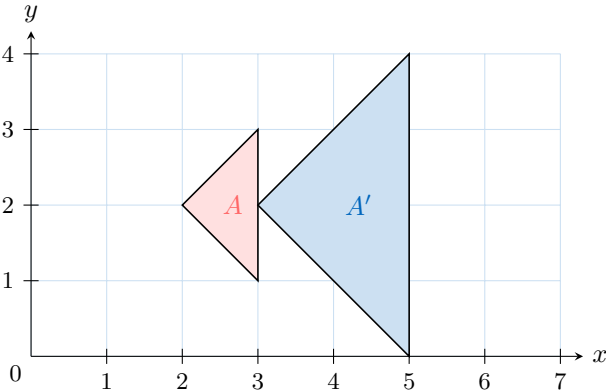


Find the scale factor.

$k =$

**A.3 FINDING THE CENTER**

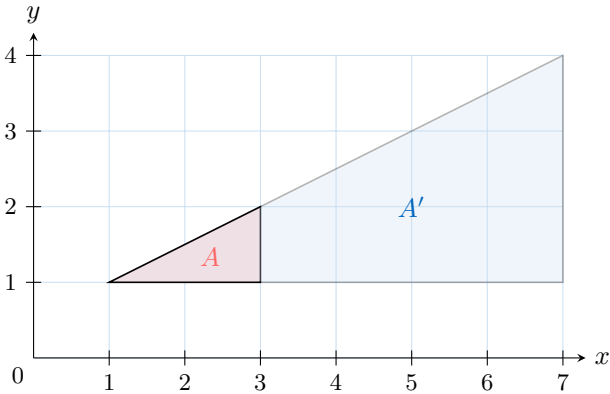
**Ex 12:** The figure  $A'$  is the image of figure  $A$  under a homothety with center  $O$  and scale factor  $k = 2$ .



Find the coordinates of the center  $O$ .

$O(\text{ }, \text{ })$

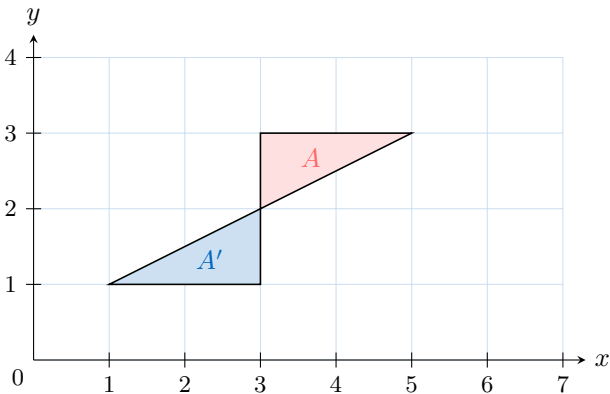
**Ex 13:** The figure  $A'$  is the image of figure  $A$  under a homothety with center  $O$  and scale factor  $k = 3$ .



Find the coordinates of the center  $O$ .

$O(\text{ }, \text{ })$

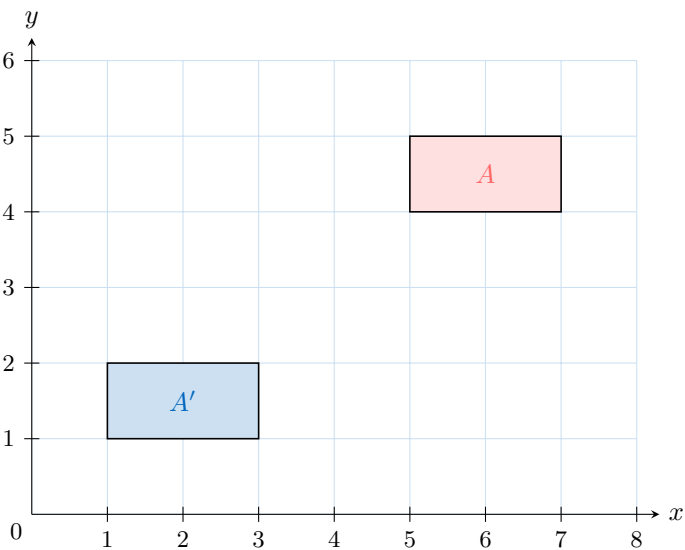
**Ex 14:** The figure  $A'$  is the image of figure  $A$  under a homothety with center  $O$  and scale factor  $k = -1$ .



Find the coordinates of the center  $O$ .

$O(\text{ }, \text{ })$

**Ex 15:** The figure  $A'$  is the image of figure  $A$  under a homothety with center  $O$  and scale factor  $k = -1$ .

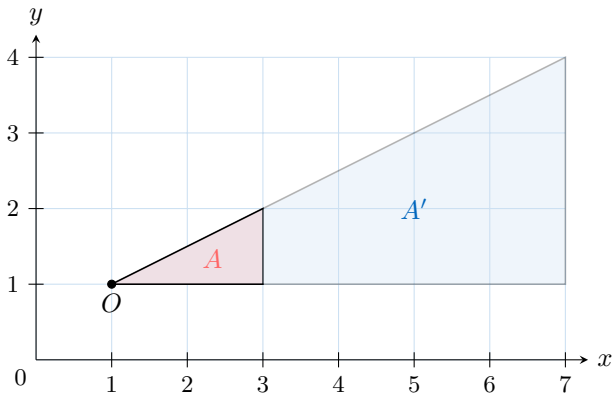


Find the coordinates of the center  $O$ .

$O(\text{ }, \text{ })$

**A.4 FINDING THE SCALE FACTOR**

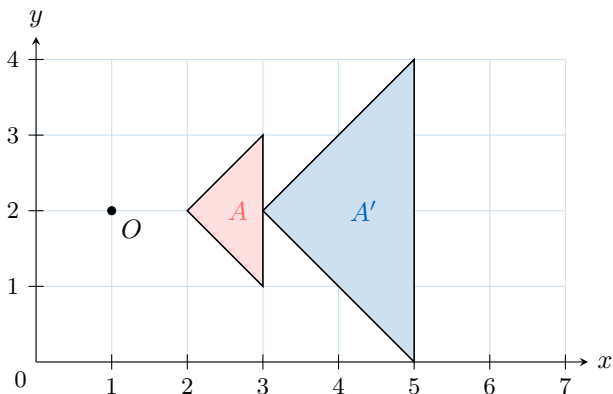
**Ex 16:** The figure  $A'$  is the image of figure  $A$  under a homothety with center  $O$  and scale factor  $k$ .



Find the scale factor.

$k = \text{ }$

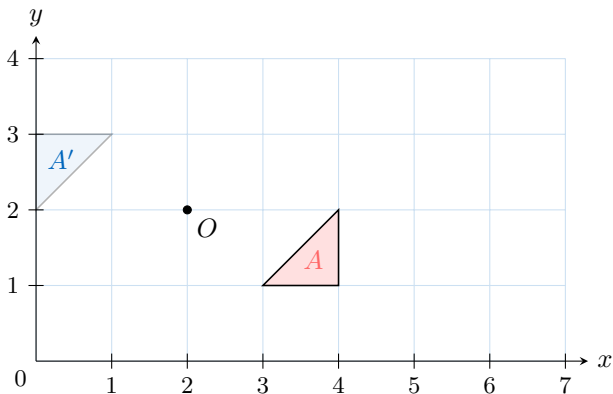
**Ex 17:** The figure  $A'$  is the image of figure  $A$  under a homothety with center  $O$  and scale factor  $k$ .



Find the scale factor.

$k = \text{ }$

**Ex 18:** The figure  $A'$  is the image of figure  $A$  under a homothety with center  $O$  and scale factor  $k$ .

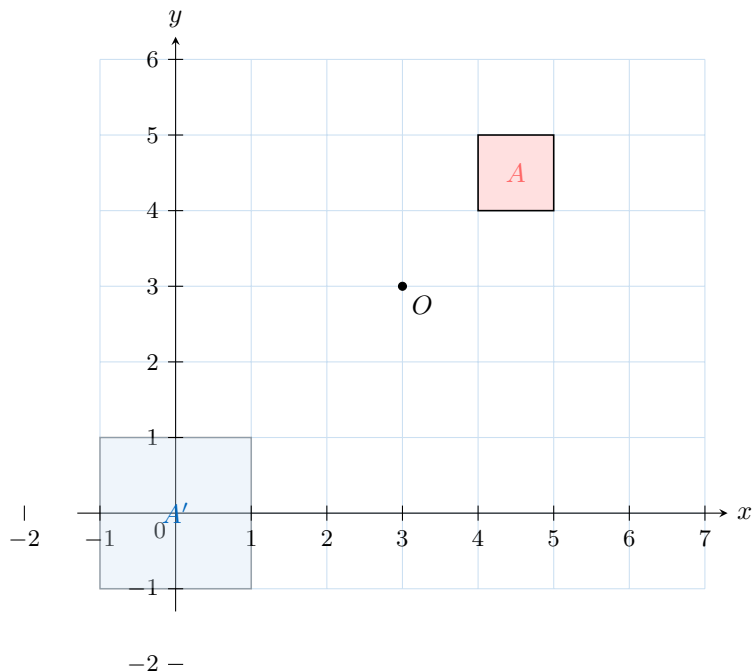


Find the scale factor.

$k = \text{ }$

**Ex 19:** The figure  $A'$  is the image of figure  $A$  under a homothety with center  $O$  and scale factor  $k$ .



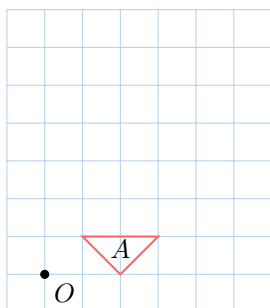


Find the scale factor.

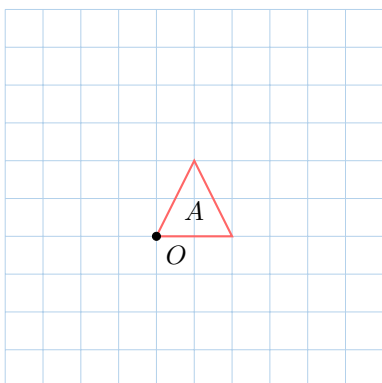
$$k = \boxed{\phantom{00}}$$

### A.5 DRAWING IMAGES FIGURES

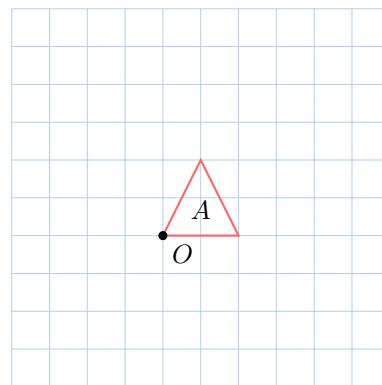
**Ex 20:** Draw the figure  $A'$ , the image of figure  $A$  under a homothety with center  $O$  and scale factor  $k = 2$ .



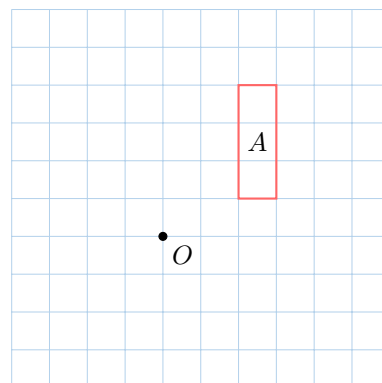
**Ex 21:** Draw the figure  $A'$ , the image of figure  $A$  under a homothety with center  $O$  and scale factor  $k = 3$ .



**Ex 22:** Draw the figure  $A'$ , the image of figure  $A$  under a homothety with center  $O$  and scale factor  $k = -2$ .

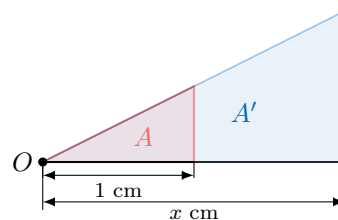


**Ex 23:** Draw the figure  $A'$ , the image of figure  $A$  under a homothety with center  $O$  and scale factor  $k = -1$ .



### A.6 FINDING AN UNKNOWN LENGTH

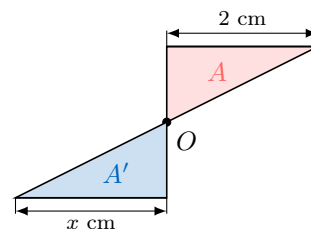
**Ex 24:** The figure  $A'$  is the image of figure  $A$  under a homothety with center  $O$  and scale factor  $k = 2$ .



Find  $x$ .

$$x = \boxed{\phantom{00}}$$

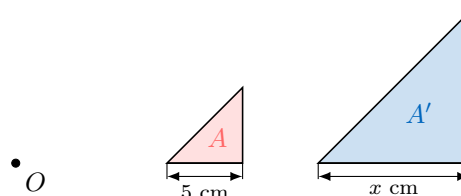
**Ex 25:** The figure  $A'$  is the image of figure  $A$  under a homothety with center  $O$  and scale factor  $k = -1$ .



Find  $x$ .

$$x = \boxed{\phantom{00}}$$

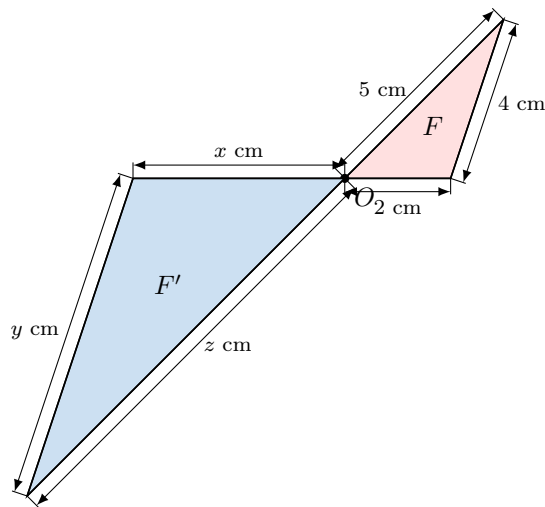
**Ex 26:** The figure  $A'$  is the image of figure  $A$  under a homothety with center  $O$  and scale factor  $k = 3$ .



Find  $x$ .

$x =$

**Ex 27:** The figure  $A'$  is the image of figure  $A$  under a homothety with center  $O$  and scale factor  $k = -2$ .



Find  $x, y, z$ .

$x =$  ,  $y =$  ,  $z =$

